Blaze brings regrowth?

by Ed Berg

It was about this time in 1994 that the Windy Point Fire south of Tustumena Lake was in high hear. It had been a very dry August with 0.8 inches of rain, at the end of a very dry summer with rainfall down 50 percent overall.

The fire started from an abandoned campfire on the south shore of Tustumena Lake on August 30. We watched it putter around for a week, then it took off on the seventh day, with flame lengths of 150 feet, and the smoke column reaching 20,000 feet.

We took no suppression action because it is our policy to let fires burn in remote areas, if there is no threat to human life or property. The fire was ultimately extinguished by October rains and cold weather, with a final score of 2,800 acres burned.

The fire was resident on the landscape for a long time–probably about six weeks. This allowed it to burn through the duff to mineral soil. When we surveyed the area the following summer the ground was washed clean of ash and we hiked for miles over bar mineral soil. It as as if someone had come into the room and simply removed the vegetative carpet; we were right down to the mineral subfloor. Occasionally we found patched of unburned carpet, often a peaty sphagnum moss layer as much as 12 inches thick. We saw only a few scattered grass plants, and never any indication of a prefire grass sod.

The fire burned in an old forest of upland black spruce on the rolling hills and marshy areas, with white spruce and birch on the hilltops. We counted tree rings on the burned black spruce, and found that the oldest trees dated to about 1,760, indicating that the area had not burned for at least 230 years. We found no evidence of earlier fires, such as charred wood or burn poles, so it is likely that the area had not burned for many centuries.

The remarkable fact about this burn is the dense regrowth of birch seedlings on the mineral soil.

These seedlings began to appear the year after the burn, presumably from seeds blown across the snow. On a white spruce-birch survey plot we recorded 1,628 birch seedlings per square meter in 1997 (decreasing to 890 in 1999). On the black spruce plots, which were hundreds of meters from seed trees, we recorded about 1 birch seedling per square meter, with little mortality from 1997 to 1999.

The densely packed seedlings on the white spruce-birch plots are apparently competing severely, as shown by their high mortality in the last two years and their small size of about 6 inches on the sparse black spruce plots, the birch seedlings are now 2- to 3- feet high and are well on their way to providing excellent winter browse for moose and hares, as shown by the browsed stems and numerous hare pellets.

It takes this kind of deep mineral soil burn to get good browse regeneration. We have seen this before, in the 1969 Swanson River burn, as well as the 1987 prescribed burn in the Skilak Loop. These were deep burns that have produced tremendous birch crops and are now some of our best moose areas. At Windy Point we estimated mineral soil at about 90 percent.

This contrasts sharply with early spring burns like the 1996 Crooked Creek and Hidden Creek burns, where we estimated mineral soil exposure at about 1 to 2 percent, and we expect that these burns will be dominated by grass for many decades.

Our four-day surveying trips to the Windy Point burn are always touch-and-go on the unpredictable Tustumena Lake. Refuge mechanic Mark Wegner takes us to our campsite at Windy Point in a Boston Whaler, towing a 15-foot Achilles inflatable which we use for commuting along the shore to our various plots. In 1995 typhoon Oscar came up during the day. When we returned to our boat about 6 p.m., there were 4- to 6- foot waves, driven by a powerful southeastern wind coming down off Tustumena Glacier. There was no question of trying to return to camp by boat, so we spent a stormy and rather sleepless night huddled in our Mustang suits under an improvised blue tarp lean-to, feeding the campfire and dining on candy bars.

This year we spent a couple of afternoon hours sitting in the rain waiting for the wind to die down and contemplating another sleepless nigh in our Mustang suits. Fortunately the wind slowed, and we were able to launch the Achilles and move to another plot. When we returned to our rain soaked camp in mid evening, we found it necessary to "pre-dry" the firewood over a gas camp stove in order to get it to burn. Next time

we are bring fusees and Sterno paste for fire starting.

Ed Berg has been the ecologist at the Kenai National Wildlife Refuge since 1993. He has led the vegetation surveys of the Windy Point burn in 1995, 1997, and 1999.